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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/916,924	07/27/2001	Shuaibin Lin	5201-23200	8766

7590 06/27/2005

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EXAMINER

CRAIG, DWIN M

ART UNIT	PAPER NUMBER
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2123

DATE MAILED: 06/27/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/916,924

Applicant(s)

LIN, SHUAIBIN

Examiner

Dwin M Craig

Art Unit

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 16 March 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 9-11 and 13-28 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 9-11 and 13-23 is/are rejected.
- 7) ☒ Claim(s) 24-28 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

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DETAILED ACTION

1. Claims 9-11 and 13-19 have been presented for reconsideration based on Applicant's arguments and amended claim language. Claims 20-28 have been presented for Examination. Claims 1-8 and 12 have been cancelled.

Response to Arguments

2. Applicant's arguments presented in the 3-16-2005 responses have been fully considered. The Examiner's response is as follows.

2.1 Regarding the Applicant's response to the Duplicate Claim Warning. The Examiner thanks the Applicant for canceling Claim 1 and the Examiner withdraws the objection to the claim.

2.2 Regarding the Applicant's response to the 35 USC § 101 rejections of claims 1 and 8. The Examiner thanks the Applicant for canceling claims 1 and 8 and the Examiner has found Applicant's argument that the rejection is moot to be convincing. The Examiner withdraws the 35 USC § 101 rejections of claims 1 and 8.

2.3 Regarding the Applicant's response to the 35 USC § 112 rejections of claims 1, 3, 12 and 15. The Examiner has found Applicant's arguments in combination with the instant amendments to the claims to be persuasive and withdraws the earlier 35 USC § 112 rejections of claims 1, 3, 12 and 15.

2.4 Regarding the Applicant's arguments regarding the 35 USC § 103 rejections of claims 1-19, Applicant argued, *of page 8 of the 3-16-2005 responses*. "*Fletcher and Taback fail, both individually and in combination, to teach, suggest or provide motivation for a diagnostic module*

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including: (i) a state machine, which is adapted to change its internal state in response to trigger events generated by the microprocessor, and to halt the microprocessor in response to a trigger event and a preceding internal state prior to the trigger event and (ii) state restoration logic adapted to use a backup register to restore the state machine to its preceding state of a trigger event is invalid." The Examiner has found this argument to be persuasive, in that the cited prior art reference(s) fail to disclose or suggest the integration of a diagnostic module, which saves the states of the host processor, when an error event occurs. The Examiner withdraws the earlier 35 USC § 103 rejections of claims 1-19.

2.5 An updated search has revealed new art.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. **Claims 9, 10, 11, 15, 16 and 17** are rejected under 35 USC § 102(b) as being anticipated by **Matsumoto US Patent 5,657,330**.

3.1 As regards independent **Claims 9 and 15** the *Matsumoto* reference teaches, a microprocessor with a diagnostic module (**Col. 1 lines 60-65**), with a method of saving and restoring the state of the microprocessor in response to trigger events (**Figures 1 and 2 Col. 5 lines 55-67**), including a backup register (**Figure 1 item 8 and Col. 6 lines 34-47**), and if the

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trigger event is not valid, using the backup register to restore the diagnostic module to its previous state (**Figure 2 items S9 and S10**).

3.2 As regards dependent **Claims 10, 11, 16 and 17** the *Matsumoto* reference teaches specified memory addresses and accessing a specified data value (**Col. 7 lines 30-34**).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

4. Dependent **Claims 13, 14, 18, 19, 20, 21 and 22** are rejected under 35 USC § 103© as being unpatentable over **Matsumoto US Patent 5,657,330** in view of **Kemp et al. US Patent 5,983,017**.

4.1 As regards independent **Claims 1 and 15** see paragraph **3.1** in this Office Action.

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4.2 As regards dependent **Claims 13, 14, 18, 19, 20, 21 and 22** the *Matsumoto* reference does not expressly disclose, branch instructions, a trigger specifically for a branch instruction, an instruction pipeline, a JTAG interface or a trace method.

The *Kemp et al.* reference discloses branch instructions (**Col. 15 lines 66-67**), a trigger specifically for a branch instruction (**Col. 15 lines 66-67 and Col. 16 lines 1-13**), an instruction pipeline (**Col. 17 line 5**), a JTAG interface (**Figure 4 item 400 Figure 5 and Col. 4 lines 46-54**) and a trace method (**Col. 1 lines 18-24**).

It would have been obvious to one of ordinary skill in the art, at the time the invention was made to have combined the diagnostic methods of the *Matsumoto* reference with the processor debugging methods of the *Kemp et al.* reference because, the methods of tracing and storing processor instructions of the processor being diagnosed, would provide an efficient and useful method of diagnosing a processor when it is in an erroneous state.

Allowable Subject Matter

5. **Claims 24-28** objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

5.1 Examiner's reasons for allowance. The Examiner notes that dependent **Claims 24-28** describe the exact multiplexor structure as disclosed in Figures 4 and 5 of Applicant's specification. The notes that the prior art neither teaches nor makes obvious, the specific structural relationships as expressly claimed in Applicant's dependent claims 24-28.

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Conclusion

6. **Claims 9-11, 13-19** has been presented for reconsideration. **Claims 1-8 and 12** have been cancelled. **Claims 20-28** have been presented for Examination. **Claims 9-11 and 13-23** have been rejected. **Claims 24-28** have been objected to. This Office Action is **Non-Final**.

6.1 Any inquiry concerning this communication or earlier communications from the examiner should be directed to Dwin M Craig whose telephone number is (571) 272-3710. The examiner can normally be reached on 10:00 - 6:00 M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Leo P Picard can be reached on (571) 272-3749. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

DMC

W. Craig
DMC
TC 2100
Priming Examiner